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| For Academic Affairs and Research Use Only |
| Proposal Number: | SM21 |
| CIP Code:  |  |
| Degree Code: |  |

 **Course Deletion Proposal Form**

**[ X ] Undergraduate Curriculum Council**

**[ ] Graduate Council**

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

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| Virginie Rolland | 9/13/2021 |

**Department Curriculum Committee Chair** |

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**COPE Chair (if applicable)** |
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| Stephen J. Mullin | 9/13/2021 |

**Department Chair** |

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**Head of Unit (if applicable)**   |
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| John Hershberger 9/23/2021 | Enter date |

**College Curriculum Committee Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Undergraduate Curriculum Council Chair** |
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| Lynn Boyd | 10/1/2021 |

**College Dean** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Graduate Curriculum Committee Chair** |
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**General Education Committee Chair (if applicable)**   |

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| Alan Utter | 11/16/2021 |

**Vice Chancellor for Academic Affairs** |

1. **Course Title, Prefix and Number**

Comparative Vertebrate Reproduction – BIO 4403

1. **Contact Person** (Name, Email Address, Phone Number)

SJ Mullin, smulling@astate.edu, 870-972-3082

1. **Justification**

Topic is too specific for demand from student population. Faculty expertise within the dept. no longer exists, and there is no intention of hiring somebody to teach this course.

1. **Last semester course will be offered**

N/A

1. No **Does this course appear in your curriculum? (if yes, and this deletion changes the curriculum, a Program Modification Form is required)**

No.

1. Yes **Is this course dual-listed (undergraduate/graduate)?**

Yes. A course deletion form is being submitted for the graduate-level course BIO 5403

1. No **Is this course cross-listed with a course in another department?**

If yes, which course(s)?

 No

1. No **Is there currently a course listed in the Bulletin or Banner which is a one-to-one equivalent to this course (please check with the Registrar’s Office if unsure)?**

If yes, which course?

No.

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.**  |

CURRENT VERSION (pg. 427):

The bulletin can be accessed at https://www.astate.edu/a/registrar/students/bulletins/

Major in Wildlife, Fisheries and Conservation (cont.)

Bachelor of Science

Emphasis in Fisheries

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

Botany elective:

BIO 3542 AND BIO 3541, Plant Pathology and Laboratory

BIO 3553. Economic Botany

BIO 4513. Plant Physiology

BIO 4522 AND BIO 4521, Wetland Plant Ecology and Laboratory

BIO 4542 AND BIO 4541, Mycology and Laboratory

BIO 4552 AND BIO 4551, Medical Mycology and Laboratory

BIO 4704. Plant Systematics

BIO 4714, Dendrology

Other courses approved by advisor

3-4

Zoology elective:

BIO 3303 AND BIO 3301, General Entomology and Laboratory

BIO 3313 AND BIO 3311, Economic Entomology and Laboratory

BIO 3302 AND BIO 3312, Comparative Anatomy and Laboratory

BIO 3322 AND BIO 3332, Invertebrate Zoology and Laboratory

BIO 4332 AND BIO 4342, Animal Histology and Laboratory

BIO 4333, Marine Biology

BIO 4343 AND BIO 4341, Animal Embryology and Laboratory

BIO 4354, Mammology

BIO 4362, Applied Aquaculture

BIO 4363 AND BIO 4361, Mammalian Neurobiology and Laboratory

BIO 4372, Applied Fisheries

BIO 4373 AND 4371, Animal Ecology and Laboratory

BIO 4382 AND BIO 4392, Parasitology and Laboratory

BIO 4403, Comparative Vertebrate Reproduction

BIO 4453 AND BIO 4451, Herpetology and Laboratory

BIO 4423 AND BIO 4421, Ornithology and Laboratory

BIO 4433, Field Experience in Marine Environments

BIO 4443 AND 4441, Comparative Animal Physiology and Laboratory

NOTE: An individual course cannot be used as both a required course and an elective.

3-5

Electives:

Choose from Botany and/or Zoology electives above.

NOTE: An individual course cannot be used as both a required course and an elective.

7-10

Sub-total 81

Total Required Hours: 120

REVISED VERSION:

The bulletin can be accessed at https://www.astate.edu/a/registrar/students/bulletins/

Major in Wildlife, Fisheries and Conservation (cont.)

Bachelor of Science

Emphasis in Fisheries

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BIO 4542 AND BIO 4541, Mycology and Laboratory

BIO 4552 AND BIO 4551, Medical Mycology and Laboratory

BIO 4704. Plant Systematics

BIO 4714, Dendrology

Other courses approved by advisor

3-4

Zoology elective:

BIO 3303 AND BIO 3301, General Entomology and Laboratory

BIO 3313 AND BIO 3311, Economic Entomology and Laboratory

BIO 3302 AND BIO 3312, Comparative Anatomy and Laboratory

BIO 3322 AND BIO 3332, Invertebrate Zoology and Laboratory

BIO 4332 AND BIO 4342, Animal Histology and Laboratory

BIO 4333, Marine Biology

BIO 4343 AND BIO 4341, Animal Embryology and Laboratory

BIO 4354, Mammology

BIO 4362, Applied Aquaculture

BIO 4363 AND BIO 4361, Mammalian Neurobiology and Laboratory

BIO 4372, Applied Fisheries

BIO 4373 AND 4371, Animal Ecology and Laboratory

BIO 4382 AND BIO 4392, Parasitology and Laboratory

BIO 4453 AND BIO 4451, Herpetology and Laboratory

BIO 4423 AND BIO 4421, Ornithology and Laboratory

BIO 4433, Field Experience in Marine Environments

BIO 4443 AND 4441, Comparative Animal Physiology and Laboratory

NOTE: An individual course cannot be used as both a required course and an elective.

3-5

Electives:

Choose from Botany and/or Zoology electives above.

NOTE: An individual course cannot be used as both a required course and an elective.

7-10

Sub-total 81

Total Required Hours: 120

CURRENT VERSION (pg. 429):

The bulletin can be accessed at https://www.astate.edu/a/registrar/students/bulletins/

Select two of the following:

BIO 3673, Human Dimensions of Natural Resources

BIO 4613, Conservation Biology

POSC 4633, Environmental Law and Administration

6

Select two of the following:

BIO 4354, Mammalogy

BIO 4453 AND 4411, Herpetology and Laboratory

BIO 4423 AND 4421, Ornithology and Laboratory

8

Botany elective:

BIO 3501 AND BIO 3511, Wild Flowers of Arkansas and Laboratory.

BIO 3542 AND BIO 3541, Plant Pathology and Laboratory

BIO 3553. Economic Botany

BIO 4513. Plant Physiology

BIO 4522 AND BIO 4521, Wetland Plant Ecology and Laboratory

BIO 4542 AND BIO 4541, Mycology and Laboratory

BIO 4552 AND BIO 4551, Medical Mycology and Laboratory

BIO 4714, Dendrology

Other courses approved by advisor

3

Communication elective:

ENG 3063, Writing for STEM

See advisor for acceptable substitutions.

3

Zoology electives:

BIO 3303 AND BIO 3301, General Entomology and Laboratory

BIO 3313 AND BIO 3311, Economic Entomology and Laboratory

BIO 3302 AND BIO 3312, Comparative Anatomy and Laboratory

BIO 3322 AND BIO 3332, Invertebrate Zoology and Laboratory

BIO 4332 AND BIO 4342, Animal Histology and Laboratory

BIO 4333, Marine Biology

BIO 4343 AND BIO 4341, Animal Embryology and Laboratory

BIO 4354, Mammology

BIO 4362, Applied Aquaculture

BIO 4363 AND BIO 4361, Mammalian Neurobiology and Laboratory

BIO 4372, Applied Fisheries

BIO 4382 AND BIO 4392, Parasitology and Laboratory

BIO 4403, Comparative Vertebrate Reproduction

BIO 4453 AND BIO 4451, Herpetology and Laboratory

BIO 4423 AND BIO 4421, Ornithology and Laboratory

BIO 4433, Field Experience in Marine Environments

BIO 4443 AND 4441, Comparative Animal Physiology and Laboratory

An individual course cannot be used as both a required course and an elective.

4-5

Sub-total 81

Total Required Hours: 120

REVISED VERSION:

The bulletin can be accessed at https://www.astate.edu/a/registrar/students/bulletins/

Select two of the following:

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BIO 4613, Conservation Biology

POSC 4633, Environmental Law and Administration

6

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BIO 4354, Mammalogy

BIO 4453 AND 4411, Herpetology and Laboratory

BIO 4423 AND 4421, Ornithology and Laboratory

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Botany elective:

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BIO 3553. Economic Botany

BIO 4513. Plant Physiology

BIO 4522 AND BIO 4521, Wetland Plant Ecology and Laboratory

BIO 4542 AND BIO 4541, Mycology and Laboratory

BIO 4552 AND BIO 4551, Medical Mycology and Laboratory

BIO 4714, Dendrology

Other courses approved by advisor

3

Communication elective:

ENG 3063, Writing for STEM

See advisor for acceptable substitutions.

3

Zoology electives:

BIO 3303 AND BIO 3301, General Entomology and Laboratory

BIO 3313 AND BIO 3311, Economic Entomology and Laboratory

BIO 3302 AND BIO 3312, Comparative Anatomy and Laboratory

BIO 3322 AND BIO 3332, Invertebrate Zoology and Laboratory

BIO 4332 AND BIO 4342, Animal Histology and Laboratory

BIO 4333, Marine Biology

BIO 4343 AND BIO 4341, Animal Embryology and Laboratory

BIO 4354, Mammology

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BIO 4382 AND BIO 4392, Parasitology and Laboratory

BIO 4453 AND BIO 4451, Herpetology and Laboratory

BIO 4423 AND BIO 4421, Ornithology and Laboratory

BIO 4433, Field Experience in Marine Environments

BIO 4443 AND 4441, Comparative Animal Physiology and Laboratory

An individual course cannot be used as both a required course and an elective.

4-5

Sub-total 81

Total Required Hours: 120

CURRENT VERSION (pg. 474):

**BIO 4383. Vertebrate Endocrinology** Examination of the vertebrate endocrine and neuro­endocrine processes at various levels (molecular to organismal) with a focus on comparative endocrinology. Topics will include synthesis, transport, mechanisms of action and regulation, and dysfunctions of endocrine control. Prerequisites, BIO 2013 and CHEM 1023.

**BIO 4384. Parasitology** Evolution, life cycles, pathology, treatment and identification of biomedically important vertebrate parasites. Special course fees may apply. Lecture three hours and lab three hours per week. Prerequisites, “C” or better in both BIO 1301 and BIO 1303.

**BIO 4401. Ichthyology Laboratory** Two hours per week. Special course fees may apply. To be taken concurrently with BIO 4402. Fall, even.

**BIO 4402. Ichthyology** Taxonomy, distribution, natural history, and economic importance of fishes, with emphasis on Arkansas species. Lecture two hours per week. Special course fees may apply. Prerequisites, BIO 1301 and BIO 1303. Fall, even.

**BIO 4403. Comparative Vertebrate Reproduction** This combined lecture and lab course surveys major events in the vertebrate reproductive cycles and patterns. Special course fees may apply. Prerequisites, BIO 4441 and BIO 4443, or BIO 3323 and 3321. Dual Listed BIO 5403. Fall, even.

**BIO 4413. Wildlife Program Internship** Participation in a professional wildlife or fisheries educational, management or research program activity. Internship is arranged by the student and may be a volunteer or paid position. Entails a minimum of 160 work hours. Special course fees may apply. Must be approved by advisor or chair. Fall, Spring, Summer.

**BIO 4421. Ornithology Laboratory** Three hours per week. Special course fees may apply. To be taken concurrently with BIO 4423. Spring.

**BIO 4423. Ornithology** Morphology, physiology, taxonomy, behavior, ecology, natu­ral history, zoogeography, and evolution of birds. Lecture three hours per week. Special course fees may apply. Prerequisites, BIO 1301 and BIO 1303. Spring.

**BIO 4433. Field Experience in Marine Environments** Hands on experience with living and non living components of environments. Emphasis on marine organisms and habi­tats but will incorporate human interactions associated with marine environments. Course is comprised of an intensive 12 day, 10 hours a day, field trip to an appropriate marine environ­ment. Special course fees may apply. Prerequisites, BIO 4333, or BIOL 1003 and BIOL 1001, or instructor permission.

**BIO 4441. Comparative Animal Physiology Laboratory** Three hours per week. Special course fees may apply. To be taken concurrently with BIO 4443. Fall,even.

**BIO 4443. Comparative Animal Physiology** Examination of physiological systems and processes across vertebrate and invertebrate groups. Broad topics include energetic relation­ships, integrating systems, reproduction, internal transport, and maintenance of internal balance. Prerequisites, BIO 1301, BIO 1303, BIO 2013, CHEM 1021, and CHEM 1023. Dual Listed BIO 5443. Fall, even.

**BIO 4451. Herpetology Laboratory** Three hours per week. Special course fees may apply. To be taken concurrently with BIO 4453. Spring.

**BIO 4453. Herpetology** Examination of the biology amphibians and reptiles, with emphasis on evolutionary history, behavior, physiology, morphology, and ecology. Prerequisites, BIO 1301 and 1303. Spring.

**BIO 4513. Plant Physiology** General principles of conduction, cellular reactions, respira­tion, growth, photosynthesis, movement, hormones, and metabolism in plants. Lecture three hours per week. Special course fees may apply. Prerequisites, BIO 1501, BIO 1503, and CHEM 2064 or 3103 and 3101.

**BIO 4521. Wetland Plant Ecology Laboratory** Three hours per week. To be taken concurrently with BIO 4522. Special course fees may apply. Fall, odd.

REVISED VERSION:

**BIO 4383. Vertebrate Endocrinology** Examination of the vertebrate endocrine and neuro­endocrine processes at various levels (molecular to organismal) with a focus on comparative endocrinology. Topics will include synthesis, transport, mechanisms of action and regulation, and dysfunctions of endocrine control. Prerequisites, BIO 2013 and CHEM 1023.

**BIO 4384. Parasitology** Evolution, life cycles, pathology, treatment and identification of biomedically important vertebrate parasites. Special course fees may apply. Lecture three hours and lab three hours per week. Prerequisites, “C” or better in both BIO 1301 and BIO 1303.

**BIO 4401. Ichthyology Laboratory** Two hours per week. Special course fees may apply. To be taken concurrently with BIO 4402. Fall, even.

**BIO 4402. Ichthyology** Taxonomy, distribution, natural history, and economic importance of fishes, with emphasis on Arkansas species. Lecture two hours per week. Special course fees may apply. Prerequisites, BIO 1301 and BIO 1303. Fall, even.

**BIO 4413. Wildlife Program Internship** Participation in a professional wildlife or fisheries educational, management or research program activity. Internship is arranged by the student and may be a volunteer or paid position. Entails a minimum of 160 work hours. Special course fees may apply. Must be approved by advisor or chair. Fall, Spring, Summer.

**BIO 4421. Ornithology Laboratory** Three hours per week. Special course fees may apply. To be taken concurrently with BIO 4423. Spring.

**BIO 4423. Ornithology** Morphology, physiology, taxonomy, behavior, ecology, natu­ral history, zoogeography, and evolution of birds. Lecture three hours per week. Special course fees may apply. Prerequisites, BIO 1301 and BIO 1303. Spring.

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**BIO 4521. Wetland Plant Ecology Laboratory** Three hours per week. To be taken concurrently with BIO 4522. Special course fees may apply. Fall, odd.